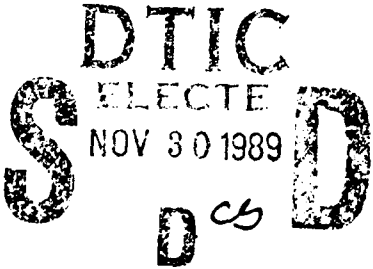


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4. TITLE AND SUBTITLE  ATTENUATION IN THE WESTERN GREAT BASIN			5. FUNDING NUMBERS  61101E AO 4397	
. AUTHOR(S)  Drs. Keith F. Priestley & Alan S. Ryall				
. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) University of Nevada Reno, NV 89557			8. PERFORMING ORGANIZATION REPORT NUMBER  AFOSR-TR-89-1448	
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UNIVERSITY OF NEVADA — RENO — NEVADA — 89557

Mackay School of Mines  
Seismological Laboratory

Telephone (702) 784-4975

1 February 1984

Quarterly Research and Development Status Report

No. 5

1 April 1983 - 30 June 1983

ARPA Order:	4397
Program Code:	3D60
Name of Grantee:	University of Nevada - Reno
Grant Expiration Date	30 September 1984
Amount of Grant:	\$203,692
Grant Number:	49620-83-C-0012
Principal Investigators:	Keith F. Priestley Alan S. Ryall
Program Manager:	Keith F. Priestley
Short Title of Work:	ATTENUATION IN THE WESTERN GREAT BASIN

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Sponsored by  
Advanced Research Projects Agency (DOD)  
ARPA Order No. 4397  
Monitored by AFOSR Under Grant 49620-83-C-0012

## 1. Research Program and Plan

- (a) Operate three wideband, digital seismic stations in the western Great Basin as a dispersed network.
- (b) Use data from these stations to examine variations in  $m_b$  and  $t^*$  from area to area in the western Great Basin.
- (c) Investigate ways in which high-quality digital stations may be used to improve seismic verification at regional distance ranges.
- (d) Study variations in the attenuation operator for multiple  $S_cS$  recorded at western U.S. stations.
- (e) Study  $m_b/M_s$  relationships for Mammoth earthquake sequence.

## 2. Status of Project

### (a) Progress During the Reporting Period:

- (1) Read additional times for teleseismic data from CNTA array, used U.S.G.S. inversion program to interpret data.
- (2) Installed digital station at Washoe City site.
- (3) Additional software developed for processing digital data.

### (b) Major Equipment Purchased During Reporting Period: None.

### (c) Change in Key Personnel During the Reporting Period: None.

### (d) Trips, Meetings, Papers Given During the Reporting Period:

#### (1) Priestley's travel:

- (a) to Menlo Park, 4/21-23 to use teleseismic p-delay inversion routine for CNTA data.
- (b) to Salt Lake City, 5/1-5 to attend SSA meeting; presented paper on CNTA data, and paper on digital network.
- (c) to Orcas Island 5/16-18 for DARPA/AFOSR Contractors' meeting.
- (d) to Menlo Park 5/27-28 to obtain additional p-delay data.

#### (2) Ryall's travel:

- (a) 4/12-13 Cornell University COPSTOC meeting--gave paper on Mammoth Lakes sequence, mechanisms.
- (b) 4/26-28 DOE--sponsored meeting at Mammoth Lakes.

(c) 5/2-4--SSA, Salt Lake City, co-author on 5 papers:

1. Nicks, Priestley, Ryall: Nevada digital seismic network.
2. Hill, Cockerham, Eaton, Ellsworth, Lindh, Allen, Hutton, Johnson, Rodgers, Carr, Ryall: Seismicity along the Pacific- North American Plate Boundary in California and Western Nevada, 1980-1981.
3. Wallace, Hill, Ryall, Cockerham: Potential for large earthquakes in the central Nevada-eastern California seismic belt.
4. McNally, Rundle, Ryall, Burdick: Study of January 1983 Mammoth Lakes, California earthquake sequence.
5. Ryall, Vetter, Lide: Earthquakes and magma injection at Mammoth Lakes, California.

(d) 5/16-18 DARPA/AFOSR Contractors' meeting, Orcas Island. Presented paper: Ryall and Vetter: Estimation of principal stresses to mid-crustal depth in the western Great Basin.

(e) 6/23-24 Western States Seismic Policy Council--western Yellowstone, Mt.

(e) Problems Encountered: None.

(f) No deviation in the planned effort to achieve the objective of the contract is anticipated.

(g) Fiscal Status:

1. Amount currently provided in contract: \$203,692
2. Expenditures and commitments to date: \$47,051
3. Estimated funds required to complete this work: \$203,692
4. Estimated date of completion of work: 30 September 1984